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Cover

UTCS fires up some memories. Turn to page 14 for *5 Years Ago*.

We would like to thank Krys Warchol for the cover photo on January's issue, a credit which was inadvertently omitted.

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The SSSP: Bach to BASIC

"Music, which should be alive and vibrating, needs new means of expression, and science alone can infuse it with youthful sap.... I dream of instruments obedient to thought - and which, supported by a flowering of undreamed-of timbres, will lend themselves to any combination I choose to impose and will submit to the exigencies of my inner rhythm."

The composer Edgar Varese wrote these words in 1917. I recently spoke with William Buxton, the co-ordinator of the Structured Sound Synthesis Project, about the goals, problems, and accomplishments of this group. Discussing the theory behind the project's system of computer-aided musical notation, he remarked that "the whole concept was to make notation a true tool of thought". This inadvertent, and astonishingly direct echo of the wistful musings of Varese was a vivid reminder of how computer technology has transformed into actuality what decades ago was merely matter for fantasy. Varese's imaginings had only the remotest relation to the technical reality of his day. With the proliferation of computer technology in the latter part of this century, the kind of aesthetic leap he envisioned has become a tangible, or, if you prefer, audible reality.

Few people realize that the technology necessary for precisely the type of enhanced expressive capabilities Varese dreamt of is being actively developed here at the University of Toronto. For the past five years, the Computer Systems Research Group (CSRG) has been the home for the Structured Sound Synthesis Project, a low-profile, but very successful computer music project. The Structured Sound Synthesis Project (hereafter called the SSSP) is essentially an interdisciplinary research group. Its goal is to develop a highly accessible and powerful set of computerized tools for musical composers. The facilities the group has developed are designed to assist composers in better realizing their musical ideas without placing an excessive technical burden on them. While the most immediate goal of the project is the enhancement of the creative capabilities of a community of artists, it is not in any sense a "computer music studio", but rather an investigative environment set up to promote research into ways of making the benefits of technology accessible to laymen.

Quite apart from his role as co-ordinator of the project, as both a composer and a specialist in computer system design, William Buxton is particularly well qualified to act as project spokesman. This rare combination gives him insights into the needs of his user community as well as the technical expertise necessary to accomodate those needs within the design of a computing system.

During our conversation, he gave a concise overview of the different elements which make up the system. "The computerized compositional aids", he explained, "fall into three different categories: the first is a set of tools for shaping score materials, for the composition and notation of sounds, and the second could be called the 'instrument maker' - it allows you to define your own palette of timbres or instrumental colouration. In other words, you not only compose the notes that the instruments play, but you design the virtual instruments to play these notes." While the first two sets of tools constitute the compositional phase of the composer's work, the third is related to the performance phase of the work. "Essentially, we've created an environment which allows musicians to perform and interpret the materials composed with the other tools.... in a manner similar to conducting."

The project derives its name from the 'instrument-maker' component of the system, which allows composers to generate sound with the aid of the computer. The aesthetic ramifications of this innovation

continued...

SSSP continued

are enormous. Essentially, it gives the composer full control over the sonic characteristics of his work, an aspect of music not normally within the composer's domain. The traditional composer typically works by arranging the pre-determined sounds produced by conventional instruments. The SSSP system gives the composer the opportunity of generating musical tones which may reflect his own artistic vision more closely than the timbres of known instruments. Within this context, the composer's work becomes analagous to the sculptor's: he shapes each sound in a composition from the raw material of electronically-generated sound, creating what Mr. Buxton calls "a personal palette of timbres".

A computer-controlled digital sound synthesizer, which generates complex sounds in real time, is at the heart of the SSSP system. The element of real time is crucial because the results of a command must be heard immediately so that appropriate alterations to the character of that sound can be made. Real time sound generation enables composers to specify and subsequently alter sound attributes in a genuinely interactive fashion.

Very friendly software makes the process of defining a palette of timbres both an easy and a creatively stimulating experience. Sitting at a terminal, the composer stipulates the constituent attributes of sounds - that is, pitch, duration, and amplitude - by calling up an interactive graphics-based program called 'objed' (an acronym for object editor). On initial entry into the program, a screen containing diagrammatic representations of the waveform, pitch, and volume of a default sound is automatically displayed. When the signal 'play' is activated, this sound is immediately heard. In keeping with the modular design which governs the SSSP system, its attributes can be selectively altered in a number of ways.

For example, the user can slide the handle of any of three potentiometer-like devices called 'sliders' to alter pitch, volume, or duration of sounds; select an alternative waveform from a menu screen displaying eight standard waveform shapes; create new waveforms by defining the wave spectrum on a graphical display; or define sound amplitude by actually drawing the contour of an attack-decay envelope on a drawing device known as a tablet.

After defining his palette of timbres, a composer may wish to compose and notate the sounds using the second set of tools provided by the SSSP system. Apart from the great convenience associated with computer-aided musical notation - the same kind of convenience a writer enjoys with word processing equipment - the system offers composers tremendous notational flexibility. A variety of notational schemes, each highlighting a different musical aspect, can be employed, even within the same work. When setting the dynamics of a work, the composer can, for example, use a piano-roll type notation which highlights amplitude and duration; similarly, when orchestrating a piece, the composer can call up a notational scheme which highlights orchestration, functioning somewhat like a topographical map of the symbolized timbres created during an 'objed' session.

Common Music Notation, the traditional notation form, is also available to the composer, because, as Mr. Buxton was eager to emphasize, the system is designed to enhance and supplement, not replace, existing forms of musical expression: "The technology is not there to replace old gestures, but to expand and introduce new gestures into the musical vocabulary." Nor is it necessary for a composer to make use of all the computerized tools developed by the group; the modularity of the system ensures that users can use it selectively to fit the particular musical context they have created.

While such a system may allow a composer to create works of great artistic merit in the laboratory setting, he may well feel his work is meaningless unless he can perform it in public. For obvious reasons, the performance of computer music is problematic; the extensive equipment involved makes transportation nearly impossible, and con-

continued...

SSSP continued

certs which rely heavily on taped music tend to be static, uninspiring spectacles. Fortunately, the SSSP group has devised a means of overcoming the difficulties related to presenting computer-generated music to the public.

The problem was solved by simply reducing the scale of the system so that it could be conveniently transported to a concert hall. The compositional environment - which is on a PDP 11/45 and an extraordinary amount of graphics equipment in the CSRG laboratories - is not portable. However, using what Mr. Buxton refers to as a "mothership arrangement involving a small LSI/11 microcomputer which is hooked up to the PDP 11/45 and controls the synthesizer ... computer music can be both performed and interpreted onstage. We can unplug it (the microcomputer), attach a graphics tablet, a small display, and a piano-type keyboard to it and suddenly I have a complete computer system which can generate all kinds of complex sounds and which can be transported in a Honda Civic." The innovative work of the SSSP in developing this method has invigorated the concert experience of computer music with the spontaneity and excitement only a live performance can generate.

Indeed, concerts, and the development of suitable performing tools to facilitate them, have been the main focus of the SSSP's activities for the past year or so. Since September of 1981, Mr. Buxton has personally given over 20 concerts both here and in the United States. Recitals given by the general user community have also been numerous. This community is made up mainly of professional and novice composers from the Toronto area, although the reputation of the project is such that about 20 per cent of the users come from abroad.

The performance phase of the project is clearly the most exciting to Buxton. The original personal motivation for developing technology for music sprang from his desire to "choreograph sound in space", to introduce a new motif into the musical lexicon - a spatial motif - and clearly, the programmability of the SSSP instruments makes this feat possible in a performance situation. Apart from fulfilling this personal goal, however, a concert situation tests the system to the limit. The possibility that the system may crash adds a distinct element of suspense to a concert. Buxton calls this "the racing car syndrome... you never know when someone's going to crash," but, "except for the very first performance, the software has never failed." *[Ed. Note: When the system goes down, does it decompose?]*

A live performance tests not only the system's hardware and software, but the validity of the philosophy which underpins and animates the project: "The real potential of technology in music becomes clear ... when a non-technical composer sits at a computer onstage with a gleam in his eyes, demonstrating that he is clearly in command of the situation because his musicianship is penetrating the system, perhaps even emerging in an enhanced form."

Clearly, the success of this project is largely due to the high priority the SSSP group places on human factors in computer design. As Mr. Buxton simply and forcefully states "access is at the root of everything we do. The primary goal of the project is access for people who are non-technologists." His own strongly humanistic approach to technological design stems from his early experiences with computer technology. As a music student in 1972, he made use of a short-lived computer music project at the NRC in Ottawa which combined extraordinary power with extraordinary friendliness: "Before I could program two plus two, I had written a film score using a computer. Music was also performed, the computer generating four voices of sound in real time while the notation was flying by me on the CRT." Unfortunately, this system was dismantled, but the experience proved "the fantastic musical potential" of technology, and led him to enroll in a computer science program at university, where he subsequently learned that same potential was totally inaccessible to musicians.

continued...

SSSP continued

It was possibly the frustration of trying to use ALGOL to implement musical ideas on a computer which indirectly inspired the formation of the interdisplinary SSSP. Those involved in project development have included psychologists, engineers, computer scientists, linguists, carpenters, and, of course, musicians. Such a large, varied group might prove an awkward organization, but less than twelve months elapsed between the time ideas were first set on paper and the time the system became operational. Buxton attributes this high level of efficiency to the commitment and co-operative spirit of a group which has included such people as K.C. Smith, Martin Lamb, Guy Fedorkow, Bill Reeves, Ron Baecker, and Wesley Lowe, to name only a few. This group has managed to accomplish jointly what none of them could have managed readily on an individual basis. Efforts were made to preserve respective areas of competence in an atmosphere described as one of "mutual respect and openness".

Perhaps, then, we could venture to conclude that the importance of the SSSP lies is two areas: in developing a computerized environment which enhances creative powers -perhaps even inspiring the exploration of new aesthetic territory - and in demonstrating the value of such joint endeavours, thereby dispelling the myth that a natural antipathy prevents the technologist and the artist from working together.

Kathy Dunlop

LIBRA Student Services

On January 4, 1982, enhanced Libra Student Services Facilities were opened to students enrolled in a number of introductory level computer science courses. These facilities are the product of an ongoing effort at UTCS to develop an efficient, powerful data processing environment for the undergraduate population of the University of Toronto. While the use of Libra is restricted to account holders, anyone is welcome to drop by and view the HSJS access system which is close to making keypunches and card-readers an anachronism at this university.

LIBRA at the Library

The expanded Libra site is located in room 1061A in the Robarts library. Equipment at this site includes 45 Lanpar XT100 terminals, 2 high speed IBM 1403 printers, and tables and chairs for study purposes. Two full-time terminal co-ordinators, Merton Hunte and Frank Pearce, will provide on-site assistance in conjunction with several part-time programming advisors.

The hours of operation of the Libra site coincide with Robarts Library hours - Monday to Friday from 9:00 a.m. to midnight, Saturday from 9:00 a.m. to 5:00 p.m., and Sunday from 1:00 p.m. to 5:00 p.m.. The site is located off the east side of room 1061, which is the first floor reading room. Take the escalator down one floor from the entrance level, turn right, and proceed through room 1061 to room 1061A.

LIBRA at Scarborough

Libra Student Services are available for the first time on the Scarborough campus this term. Located in the Science wing, room S627, the Scarborough Libra Site contains 24 XT100 terminals and two line printers.

One full-time operator/advisor, Shirley Manimalethu, is at the site to provide assistance. Hours of operation are from 9:00 a.m. to midnight, Monday to Friday, and from 10 a.m. to 5 p.m. on Saturday.

Initial Problems

There were several difficulties with the enitial installation of both the LIBRA sites.

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LIBRA Student Services continued

Scarborough experienced several "burn in" problems related to new hardware, which have now been resolved. At the Robarts LIBRA site, difficulties with the facility which communicates with the IBM 3033 have resulted in lost or partially lost jobs. This problem was load dependent and has now been corrected. However, UTCS is working on some remaining problems in the communications area.

In addition, the system (when heavily loaded) demonstrates erratic behaviour. This situation should steadily improve as UTCS tunes the machine to meet the requirements of the LIBRA environment. As performance is improved, we also expect to see shorter line-ups for terminals. Future issues of *COMPUTERNEWS* will report on the progress of LIBRA student services.

The Assessment of Older Technology

As is obvious to any observer of the computer industry, technology has moved rapidly. In compliance with user needs, UTCS has tried to maintain its older equipment to provide users with continuously upward-compatible environments. Unfortunately, this older equipment occupies resources in terms of having special procedures, special handling, and, above all, relatively high maintenance costs for rapidly decreasing use of this equipment.

The IBM 7-track tape drives date back to about 1956, and were used in conjunction with the IBM 7094 computer system. Since the 7094 is completely obsolete, IBM has considered dropping support for these 7-track (UNIT=2400-2) drives. The drives themselves use an obsolete technology and are therefore unreliable and have very little of merit to offer the contemporary user. Conversion to the newer, fully supported, and much more reliable 3400 series 9-track drives is straightforward. Generally, this conversion involves running the IEBGENER utility.

The paper tape reader (UNIT=2671) is used occasionally by some researchers. There are alternative methods of reading this data into the computer which would avoid the need for a channel attached device which not only costs a great deal to maintain, but is now used infrequently.

It should be emphasized that UTCS has not yet decided if or when these pieces of equipment should be removed from active service. We welcome comments regarding the older peripheral devices. Please contact your CSR to express your opinion.

By May of 1982, UTCS will be discontinuing all systems support of the code and protocol necessary to the use of IBM 2741 terminals. This decision was prompted by both the current generation of higher quality terminals and the almost total disuse of IBM 2741s at this university.

The IBM 2741 terminal made its debut in 1965. At that time, it was the only letter quality terminal available for use in interactive computer systems. A new generation of terminals, not based on the IBM selectric mechanism, was then developed. They were, and still are, capable of higher speeds and require less maintenance than the 2741.

Until May, terminal access with 2741s will be monitored to determine usage. If you require 2741 access, please contact your CSR.

Herb Kugel
Dr. Frank Spitzer

Computing News in Brief

U of Guelph Increased Enrollment Makes Changes

Computer assisted instruction (CAI) in the computer science courses at the University of Guelph has been modified to include classroom teaching because of increasing enrollment in computer science courses. While CAI is considered one of the most effective ways to teach computer science, it is not practical when used with large numbers of students because it produces high costs and uncontrolled instruction rates.

The modification at Guelph takes the form of a structured lab classroom. Thirty DEC VT100 video terminals are arranged in lecture-theatre style as one component in the network designed by Digital Equipment of Canada. The rest of the lab consists of two more VT100s, a projection screen, and an overhead projector. From this station the instructor is able to broadcast to all thirty terminals.

The program of CAI with classroom teaching is used primarily with introductory students. Dr. Kats Okashimo of the Department of Computing and Information Science at Guelph says that "it has all the advantages of classroom teaching and (allows) individual interaction with the computer".

Research Centre for Montreal Ecole

Ecole Polytechnique in Montreal will be the site for a new Telidon database research centre which will have a data bank consisting of 10,000 pages of textual and graphic information. J. Bernard Lavigueur, President of the Ecole, David Whiteside, President of Digital Equipment of Canada, and Federal Communications Minister Francis Fox have signed a three year agreement following the group's participation in a Montreal computer show in June of 1981. In the agreement, the Department of Communications will provide a user terminal, a page creation terminal, and the engineering expertise required to co-ordinate the program.

Hospitality Receives Computer Donation

Students of Hospitality and Tourism Management (HTM) at Ryerson are receiving front office training in a computer laboratory as a result of a $300,000 donation by Delta Hotels Ltd., the Sheraton Corp., and EECO (Electronic Engineering Company of California Inc.).

Presently, second year students in a semester "Front Office and Rooms Division" course spend about twenty hours of 'hands on' experience on the donated EECO computer system. This in-house system keeps track of reservations and room status, accounts receivable and general accounting with a system identical to those used by prominent hotels in both Canada and the U.S.

The laboratory project, initiated by G. Davidson of HTM and former department chairman G. Slavinski, is in a transition stage. The single semester course offered to second year students will be extended into a two semester course for first year students by September of 1983. With this course, students will complete their first year of Hospitality and Tourism Management at Ryerson with identifiable skills helpful in obtaining summer employment.

Computer Science Professor 'Trains' His Students

University of Waterloo professor, Dr. Michael Malcom, uses a network of trains to teach his students successful microprogramming. In a room in the Mathematics and Computer Building, Dr. Malcom has set up a series of tracks with phototransistors positioned at various points. Silver

continued...

Computing News in Brief continued

stickers are attached to the sides of each train car so that, as the car passes the phototransistor, light from an LED is reflected into a sensor which then transmits the position of the car to the computer. As many as four trains can be operated simultaneously by the students' programs. Car direction, speed, decoupling, and switching can also be controlled. According to Malcom, the trains "give the students a feeling of the potential significance of the programming techniques they're learning." It certainly is a unique way of 'training' to be a programmer.

Pat Shore

DECsystem-10 News

PACX Class 11 To Disappear

On January 19, 1982, PACX class 11 was made equivalent to class 10. Each will now automatically detect the baud rate (110, 300, or 1200 only) of the connected terminal. In the near future UTCS intends to merge classes 10 and 11 into a single class 10.

In anticipation of this change we recommend that users of 1200 baud terminals attempt to connect to the DEC-10 using class 10. Only if class 10 turns out to be busy should class 11 be specified. Users are advised to watch the DEC-10 login message to be certain that they receive up-to-date information about this planned change.

DECsystem-10 Response Time

As users of the DEC-10 are well aware, the responsiveness of the system during periods of peak load can be quite poor. The major reason for this situation is well known. The system is configured with less than an optimal amount of main memory. Consequently, there is a high probablility that a user's job will be swapped out at the moment it becomes runnable. If the system is heavily loaded, it is possible for many seconds to pass before the program finally executes.

The possibility of obtaining additional memory for the DEC-10 is presently under review by the University Administration. As an interim measure, UTCS has decided to implement three new policies which will minimize as much as possible the effects of the shortage of memory. These new policies are as follows:

1. UTCS staff will be allowed to play games only during holidays. There will no longer be any loading of the system frivilously while some users are trying to do productive work.

2. Physical memory available to users during prime time (Monday to Friday, 08:00-19:00) will be severely restricted. At present the permanent physical core limit is 200 pages. The new prime time restriction will probably be about 100 pages, although this is subject to change. Users of programs with large core images will have two options:

   (a) wait until non-prime time to execute their programs or

   (b) run them in virtual memory at a higher cost during prime time.

3. A file structure for which a user has a zero quota will no longer be automatically included in the user's job search list. Thus, "DSK:" will refer only to structures for which the user has non-zero quotas. Users who access files on another structure will have to reference that structure explicitely or change their search list manually with the PATH command. This policy will permit one of the system accounting

continued...

DECsystem-10 News continued

> files to be reduced in size by 50%. In turn, this will improve the performance of the LOGIN program and the programs which manipulate the accounting files.

Users should understand that these measures will not solve the basic problem. Extended response times will not magically disappear. We anticipate, though, that most users will find the system's response time at least somewhat improved once these policies are in place.

Dr. Edmund West

Reader Survey

COMPUTERNEWS has changed somewhat since my arrival as editor last August. Some features have been added, some have been dropped.

In order that we may serve you better, the staff of *COMPUTERNEWS* and I ask you to take a few moments to complete our reader survey, and return it to us at the address on the back. Results will be tabulated and reported in the May/June issue.

David Reed

Changed Hours of Operation

UTCS recognizes the increased growth in telecommunications services and is cross-training its operations staff to support this activity. This activity will not only increase efficiency, but will achieve economies in operation. To meet these objectives, the staffing of the computer machine room is now based on eight instead of twelve hour shifts.

There is also reduced coverage on weekends. On the academic IBM machine, regular coverage will be available from 10:00 through to 18:00 hours on Saturday and Sunday. On the DEC-10, there will be attended operation from 10:00 until 18:00 hours on Saturday.

In order to offset the now limited hours of coverage, the functions available during unattended operation will be considerably enhanced. In particular, while APL and ATMS, as well as the DEC-10 and 11/70, were previously available, certain classes of jobs will now be allowed to run. These are Class A, Class C, and Class E (providing these jobs do not require setup and were submitted prior to the end of attended operation), Class M (IPRINT), Class V (VIVA), and Class W (high speed, including LIBRA). In order to allow users to exploit these functions, WYLBUR will be allowed to run unattended, although TSO will not. If a job requiring a setup starts to run while the system is unattended, it will fail after thirty minutes, having waited for an unavailable setup response. No credit will be given for any charges incurred as a result of such job failures.

Printers located at EAT, EUT, and ASUT will not be active during unattended operation. If there were to be a power fluctuation at any of these sites, and the printers were up, we would run the risk of bringing the entire system down. Teleprocessing attached devices, such as the printers at Robart's Library, LIBRA or remote JES facilities, will remain up and functioning providing those sites are accessible to the users.

As a further result of reduced attended operation on the weekends, more operators will be on duty during the week. Their responsibilities have been realigned to provide greater support for the user community.

Dr. Frank Spitzer

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Annual COMPUTERNEWS Reader Survey

Please check (✓) if you'd like to see *COMPUTERNEWS* increase (or decrease) its coverage in the following areas:

	More	**Less**	**Same**
Computing News in Brief	☐	☐	☐
Change Committee Reports	☐	☐	☐
APL HOTNEWS Summaries	☐	☐	☐
"N" Years Ago Features	☐	☐	☐
DEC-10 Gripes	☐	☐	☐
Letters to the Editor	☐	☐	☐
User Profiles	☐	☐	☐

Do you read:

	Always	**Occasionally**	**Never**
Short Course Announcements	☐	☐	☐
Personnel Changes	☐	☐	☐
DCS Library Acquisitions	☐	☐	☐
UTCS Systems Listing	☐	☐	☐
UTCS Directory Listing	☐	☐	☐

We would appreciate answers to the following questions. No name is required.

Are you: undergraduate ☐ graduate ☐ faculty ☐ staff ☐ external user ☐

Primary Occupation or Course of Study: ____________________

Are you a *COMPUTERNEWS* subscriber? YES ☐ NO ☐

If not, how do you receive *COMPUTERNEWS?*

Terminal Site ☐ Your CSR ☐ Other ____________________

In general, do you pass *COMPUTERNEWS* along to someone else? YES ☐ NO ☐

If yes, approximately how many people (aside from yourself) would read that issue? __________

Other Suggestions. Please feel free to tell us what you like best (or least) about *COMPUTERNEWS*, or what features you'd like to see added (or dropped).

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SAS/GRAPH Update

The procedure GREMOVE has been received and installed for use with SAS/GRAPH. This procedure combines the unit areas defined by a map dataset into larger unit areas, producing a new map dataset. The original map dataset must contain one or more ID variables which uniquely define new unit areas. Unit areas defined by the new dataset have all interior line segments removed. For example, to remove census district lines from the map of Canada, you would run the following procedure:

```
PROC GREMOVE DATA=MAPS.CANADA OUT=NEWMAP;
  BY PROVINCE;
  ID CDCODE;
```

with the additional JCL statement:

```
//MAPS DD DSN=APPL.STAT.SAS795.MAPS.DATA,DISP=SHR
```

The BY variable PROVINCE uniquely defines unit areas in the new map dataset NEWMAP. The map dataset MAPS.CANADA must be sorted by the variables in the BY statement. The BY variables become ID variables for the new map dataset. The BY statement must be specified.

The ID statement gives the variable CDCODE, which identifies unit areas in the original map dataset. Variables specified in the ID statement do not appear in the new map dataset. The ID statement must be specified.

Diane Mitchell

Summary of APL Hotnews Items

The following is a list of HOTNEWS items entered between December 13, 1981 and January 19, 1982.

DATE	TITLE
18/12/81	The workspace 4 DOCWS has been fixed.
04/01/82	All changes made between 18:30 Dec. 30 and 12:00 Jan. 3 have been lost.
05/01/82	New 40 percent discount for sessions outside of prime time.
18/01/82	Sign-off message now shows discounted cost for non-prime time usage.
21/01/82	Weekend hours of service will change on February 1, 1982.

APL HOTNEWS may be accessed by loading the workspace, 1 HOTNEWS. For example, to print the news of November 28, 1981, type: NEWS ‘28/11/81’. To print all news items since October 1, 1981, type: NEWS SINCE ‘01/10/81’. For more instructions on the use of this workspace, please see the variable DESCRIBE.

Mary Ann Lawry

UTCS Change Committee

Due to the lull in Change Committee activity over the holidays, I have only a few items to report in this issue.

1. The evaluation of some of our more antiquated devices and outmoded facilities continues. (For more information, see "The Assessment of Older Technology" on page 7.)
2. Due to the reduction of IBM support, ISAM on the 3033 will be replaced by the new (and more efficient) ICF VSAM. Though its removal has not yet been scheduled, users who have ISAM datasets should contact their CSR to inquire about converting them to VSAM.
3. A manual is being prepared for people interested in using ASCII video terminals as 3278-type devices using the new SERIES/1 emulator. Extensive internal testing of the new service is now well under way. A *COMPUTER-NEWS* article describing the new service will appear in the next issue.

Terry Farley

DEC-10 Gripes

Gripe:

Along with the instructions on how to use DATAPAC on the UTCS system, why did you not include instructions on leaving the system once you were finished?

Gripe answer:

One of the Timesharing Advisors went home to Victoria, B.C. for the Christmas holidays. He was asked to try DATAPAC from the instructions we provide users. One of his complaints was the same as yours.

As a result of your gripe and some of the other problems that were experienced, he will be updating the DATAPAC help provided on WYLBUR, TSO, and the DEC10.

Gripe:

Without reading the SPELL documentation, I make the assumption that SPELL pluralizes words when attempting to match a word ending in "s". If this is the case, why is the plural form contained in the dictionary? Why not put in the singular and let it figure out the plurals?

Gripe answer:

The SPELL program was installed as is from a tape we received and is supported neither by UTCS nor the author. As a result we have not checked into the algorithms it uses.

Gripe:

Why is class 12 always busy these days? Has someone removed some lines?

Gripe answer:

When this gripe reached us, there were nine lines for class 12 (DEC-10, 4800 baud). As of press time, we have added seven more, and hope that this will alleviate problems for the time being.

Gripe:

The HELP file for dest could use updating. In particular the Zoology printers (Ramsey

continued...

DEC-10 Gripes continued

Wright) are ZUT and ZAT rather than ZOO1 and ZOO2.

Gripe answer:

As far as I know the ZOO1 and ZOO2 destinations are still valid. We will check into adding ZUT and ZAT to the list of destinations supported by IPRINT. When IPRINT supports ZUT and ZAT we can update the help for destinations.

Gripe:

SUPER is suddenly giving me three beeps when it finishes instead of one, which is annoying enough. What is going on?

Gripe answer:

As far as we know SUPER has always given three beeps. Perhaps you have switched terminal types and the old terminal only beeped once for multiple beeps.

Gripe:

When I change the right margin for RUNOFF to accommodate a longer line, the page header is also moved in order to be right justified. This is fine for the page where the wider line is required. However, when I return to a narrower page with the .rm command, the page header stays right justified at the changed position. For example, starting with .rm72, the header is placed at 72 right justified, and changing to change to .rm72 again, the page header remains at 80. Is this my fault?

Gripe answer:

We are not certain whether the action you report is a bug or a feature. All the available RUNOFF documentation is too vague to be useful in deciding this issue. It should be noted, however, that RUNOFF does appear to move the right margin independently of actual page boundaries in many cases (as for example in the extended quotations where both the left and right margins are indented), and this may explain why "rm" acts as you describe.

One UTCS staff member has suggested you could try the "page size" RUNOFF command. Its action allows you to reset the right margin of both the text and the page heading. There may be other implications of doing that though.

If this answer does not prove adequate for your needs, please contact the timesharing advising office at 978-6465 and we can pursue this further.

5 Years Ago

5 years ago this month a fire raged through the Sandford Fleming Building. The result was five years of hard work undoing the destruction wrought that morning. However, the restoration of what was one of the more elegant buildings on campus is now very near completion. In fact, the building is expected to be open for use in the summer term of 1982.

Those familiar with the current appearance of Sandford Fleming may well be surprised at the chaos and ruin depicted on our front cover. The following article, reprinted from the February/March 1977 issue of *COMPUTERNEWS*, graphically conveys the drama of that morning.

The Fire - The Early Hours

First reports of the fire in the Sandford Fleming Building were made at 2:15 a.m. February 11, 1977. Shortly thereafter, fire fighting units were on the scene as were many UTCC staff members. While firemen fought the blaze on the east side of the building, staff members were hastily re-

continued...

5 Years Ago continued

moving magnetic storage to a nearby building. At no time was it certain how long staff would be allowed to continue the evacuation of storage and for this reason the order of removal was highly selective. The first items to go were system packs and online storage. Following disk packs were the magnetic tapes which were read-only status, then system and storage back-up tapes, followed by read-write status tapes, and finally work tapes. The tape move was facilitated by the quick thinking of Acting Director Rein Mikkor who stripped the hooks from a number of coat racks and loaded tapes on "donut style". Within three and a half hours the entire library of 135 disks and 5000 tapes had been removed with only 1 pack and 2 tapes being lost.

Although flames never reached the machine area, the final part of the move was carried out through light smoke and plenty of water. In fact, the stairs leading to the building could have passed for a small white water canoe run.

Once storage was removed, firemen and staff went to work covering machinery with tarpaulins, securing the area against possible water damage. With this task completed, staff were evacuated from the building.

By 9 a.m. the fire was well under control and had been confined to the non-machine areas of the building. However, water and smoke damages to UTCC offices appeared to be extensive.

UTCC staff, displaced by the fire, congregated at 49 St. George Street. Staff from the house gave up their phone lines and offices so that the many incoming calls from reporters and alarmed users could be dealt with. There, in the midst of overcrowding and confusion, the initial plans for recovery were formulated.

Don Gibson

Letters

Sirs:

Several UTCS accounts have been observed to be playing games between 19:00 and 20:30. I think at one point in time there were three players in action.

I feel that the resources of the system in the early evening should be primarily dedicated to academic usage. The present policy permits game players to severely slow down other users. I would respectfully request that access to the GAM: area be disallowed between 19:00 and 23:00, Monday to Friday.

Brian Nixon

Dr. Frank Spitzer, UTCS' Faculty Liaison Officer, replies:

Your criticism voiced concerning the use of UTCS accounts for games is understood and acknowledged.

In an attempt to improve the response and performance of the DEC-10 environment, we have restricted playing of games by internal account holders at all times with the exception of holidays. (See "DECsystem-10 News" on page 9.)

Thank you for drawing this problem to our attention.

COMPUTERNEWS Archive

An archive of past issues of *COMPUTERNEWS* is available for reference in the Information Office, located in room 206 of the Engineering Annex.

Although the collection goes back to June of 1968, we are missing issues 1 through 42. Prior to November of 1973, *COMPUTERNEWS* was called the Computer Science Newsletter.

If you can assist us in our search for these issues, or if you have them in your possession and would like to donate them, please call us at 978-4990. It would be greatly appreciated.

David Reed

Personnel Changes

Several new people have joined UTCS. **Bob Keith** is a new supervisor in the Systems Group and **Philip Murton,** who comes from Nesbit Thomson, is working for CSS as a programmer. **Pat Shore,** a co-op English student from the University of Waterloo, has joined the Publications Group for her workterm. **Mike Hart,** another co-op student from Waterloo, is working at the Zoology Terminal (ZUT).

Previously the lab co-ordinator in CSS, **Phil Selby** has been promoted to programmer. Formerly a programmer in the Systems Group, **Alex Nishri** is the new CSR in Timesharing Advising.

Kathryn Bourne

Recent Acquisitions in the DCS Library

Annual review of information science and technology.
v.16 (1981)

Cornsweet, Tom N.
Visual perception.
New York, Academic Press, 1970.

Fletcher, R.
Practical methods of optimization.
Chichester, Wiley, 1980-81.
2 v.

Reynolds, John C.
The craft of programming.
Englewood Cliffs, N.J., Prentice-Hall International, 1981.

Shelly, Gary B. and Cashman, T.J.
Computer programming RPG II.
Fullerton, Cal., Anaheim Pub. Co., 1976.
(7th printing, April 1981)

Tennent, Robert D.
Principles of programming languages.
Englewood Cliffs, N.J., Prentice-Hall, 1981.

Tsichritzis, D.C. and Lochovsky, F.H.
Data models.
Englewood Cliffs, N.J., Prentice-Hall, 1981.

Van der Waerden, Bartel L.
Algebra.
New York, Frederick Ungar, 1970.
2 v. Tr. from the German.

continued...

New Titles continued

Vemuri, V. and Karplus, W.J.
Digital computer treatment of partial differential equations.
Englewood Cliffs, N.J., Prentice-Hall, 1981.

Workshop on Computer Architecture for Non-numeric Processng, 5th, Pacific Grove, California, March 1980.
Proceedings.
New York, ACM, 1980.

Computing Services Representatives and Enquiries

Arts and Science Terminal	Bill Fehlner	SS2133	6509
Engineering Annex Terminal	Sue Mai Chong	EA104	4357
Erindale College Terminal	Peter Wall	2043	828-5311
External Customers	Ihor Prociuk	SG200	6875,6885
New Physics Terminal	Bob Chambers	MP331	5120
Scarborough College Terminal	Bob Blackburn	H104	243-3173
Time Sharing Services	Alex Nishri	SG204	7109

General Enquiries	4990	Tape Library (Academic Services)	7319
Programming Advising	6465	Tape Library (Administrative Services)	6693
Access Codes	8703	System Status Enquiries (DEC)	4318
Account Enquiries (U of T)	8702	System Status Enquiries (IBM)	7319
Account Enquiries (External)	7148	Time-sharing Services (PACX)	6200

UTCS Directory

Director	Dr. Doron Cohen	MP350	8948
Associate Director	Al Heyworth	MP350	4936
Associate Director	Eugene Siciunas	MP350	5058
Faculty Liaison Officer	Frank Spitzer	MP350	4619
Manager, Academic Services	Terry Wood	MP350	7130
Manager, Administrative Services	Don Gibson	MP350	7331
Manager, Business	William Murphy	MP345	4428
Manager, CSS	Norman Housely	MP350	4967
Manager, Operations	Bill Lauriston	MP350	7092
Manager, Systems	Ward Beattie	MP350	3579
Executive Asst., Research & Planning	Wendy Chin	MP350	5568
Supervisor, Accounting	Marg Doherty	MP331	3960
Supervisor, Applications	Herb Kugel	SG304	7286
Supervisor, CSS Hardware	TBA	ML244	4985
Supervisor, CSS Software	Ian Darwin	ML244	6134
Supervisor, Communications	Ron VanderKraats	ML244	4624
Supervisor, DEC Operations	Krishna Patnaik	MP368	4086
Supervisor, DEC Systems	Ed West	MP331	4085
Supervisor, Entry Services	Vera Cabanus	MP217	5040
Supervisor, Field Services	Kam Mark	ML244	5471
Supervisor, IBM Operations	Dave Wong	MP368	6864
Supervisor, IBM Systems	Barry Lay	MP331	6602
Supervisor, Information Services	David Reed	EA206	2066
Supervisor, Internal Systems	Peter Young	MP331	5530
Supervisor, Keypunch Services	Zelda Anderson	HU215	5273
Supervisor, Personnel & Budget	TBA	MP345	8697
Supervisor, Programming Services	Paul Roth	SG205	8701
Supervisor, Student Services	Tom Milligan	MP331	7083
Supervisor, Text Services	John Bradley	MP217	3995

UTCS Systems

3033/N12 PROCESSOR

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR, APL and ATMS services
- 12 megabytes of memory
- MVS with JES2

4341 PROCESSOR

- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC, Batch and TSO
- 8 megabytes of memory
- MVS with JES2

DECSYSTEM-10 Model 1090

- located in McLennan Physical Laboratories
- provides General Purpose Time-Sharing
- 256 K - 36 bit words of memory
- TOPS-10 operating system

COMMUNICATIONS & SMALL SYSTEMS (CSS)

- located in Old Metro Library Bldg., Room 244
- DEC PDP-11/40 with GT44 Graphics
- DEC PDP-11/05 with GT40 Graphics
- Various Z80-based microcomputers (S-100, CP/M)
- Radio Shack TRS-80
- Western Digital Pascal MicroEngine
- Apple II Plus
- provides specialized interactive graphics
- provides online and real-time computing services, data acquisition and conversion, and minicomputer services

VAX 11/750

- located in Engineering Annex
- provides computer science interactive access
- 2 megabytes
- UNIX (Berkeley)

VAX 11/750 (LIBRA)

- located at Scarborough College
- provides "Glass Keypunch" access to HSJS
- 2 megabytes
- VMS running LIBRA

VAX 11/780 (LIBRA)

- located in McLennan Labs
- provides "Glass Keypunch" access to HSJS
- 4 megabytes
- VMS running LIBRA

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